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(54) Title: METHODS FOR IDENTIFYING NUCLEIC ACID SEQUENCES ENCODING AGENTS THAT AFFECT CELLULAR PHENOTYPES

(57) Abstract

Methods for identifying nucleic acid sequences that affect a cellular phenotype are disclosed. The method uses a reporter gene whose level of expression correlates with the phenotype in conjunction with a method or device for measuring the level of reporter expression. An expression library is introduced into the cells, and those cells exhibiting changes in reporter expression level are selected. Expression library inserts from the selected cells are isolated, thereby providing a sub–library enriched for sequences that affect the phenotype reflected by the reporter. Further rounds of sub–library introduction and cell selection may be carried out to provide additional enrichment. Sequences identified using this method may be used to ascertain the identity of additional molecules involved in generating the cellular phenotype.